From: Maia, Joe
To: Microsoft ATR
Date: 1/25/02 7:00pm
Subject: Microsoft Settlement

[Text body exceeds maximum size of message body (8192 bytes). It has been converted to attachment.]

CC: Maia, Joe,jpm@eticomm.net@inetgw

Joseph P. Maia
15 Brook Drive
Burlington, NJ 08016

Renata Hesse
Trial Attorney, Suite 1200
Antitrust Division
Department of Justice
601 D Street NW
Washington, DC 20530

The following comments pertain to the Revised Proposed Final Judgement, 6 Nov 2001 ("Revised Judgement") for the antitrust case against Microsoft ("MS").

I will also refer to the Plaintiff Litigating States' Remedial Proposals, 7 Dec 2001 ("Alternate Judgement").

I am a senior software engineer with over 23 years experience in the software development industry. I have worked as both an employee and as a consultant. I currently work for a major software systems development firm in the defense industry. Over the course of my career I have worked on development projects for both the defense and commercial industries, designing and developing both system and application software. And as one would expect, over the years I have used a variety of operating systems and programming languages. Most recently I have been developing applications using the Java programming language and runtime system.

The depth and breadth of my experience in the software development industry puts me in a position where my comments may provide additional insight into evaluating the merits of the Revised Judgement. A judgement which I characterize as woefully inadequate. First and foremost, I am deeply disappointed at the decision of the Department of Justice (DOJ) not to pursue any breakup of MS. I was also disappointed when Judge Thomas Penfield Jackson's remedy was announced. I feel that MS should be split into at least four companies: operating systems, office products, enterprise/server products, and consumer products. However, upon reading the details of that remedy, I felt it was the absolute minimum which must be done if there is to be any hope of a successful remedy which will not require continued litigation further down the road. Baring a structural remedy, many of the conduct-only remedies should be designed as if MS were being broken up, as this in many ways is the heart of the problem -- MS controls both the operating system ("OS") and many important applications, and has not hesitated to pursue illegal means to use this to their advantage.

Since the possibility of a breakup appears moot, the remaining comments deal specifically with the Revised Judgement. Since my expertise is in the area of software development and not marketing, my comments will deal primarily with the needs of the software development community and the impact that might have on consumers.

A FEW DEFINITIONS

There are a couple of terms which the press seem to always

get wrong, or to use interchangeably, when only one term is correct. These terms are used when discussing how a product or application may be included in a supporting OS.

"Bundled Product". A bundled product is one which is simply "dropped into" an OS. Its files are completely separate from any OS files. If the product is removed from the OS, it does not affect the continued operation of the OS or of any other application (barring the possibility of unintentional file naming conflicts where certain definition files may have to go into common locations).

"Integrated Product". An integrated product on the other hand is tied into OS files in one way or another (also called "co-mingling of code") so that you cannot remove the product without adversely affecting the operation of the OS and possibly other applications. An "Integrated Product" is quite different from functionality which appears "integrated" -- the latter referring to how seamless the interface feels to the user.

"Plug-in". A plug-in architecture or API allows for the addition of added functionality to an application or OS through a standardized interface. This may or may not include additional top-level windows, or any new user interface at all. For example: this might allow third-party additions to a graphics editing program which would include additional windows, or it could also define a way for an OS to allow the OS developer or any third party developer to provide "integrated" functionality without undue benefit to the OS developer and without undue bias against any third parties (such as HTML interpreters, or digital video format interpreters).

THE HOUSE THAT MICROSOFT BUILT

I have found that comparing the software development industry to the housing construction industry helps to clarify the issues at hand and will help to point out the problems I see with the Revised Judgement.

The computer OS is very similar to a newly constructed house when you consider what should or should not be included with it. Both provide a framework and a collection of basic services for you to use with all the personal belongings you own.

In the new home you have standardized outlets, pre-wired phone lines, a central air/heat unit, built in kitchen appliances, possibly pre-wired cable TV lines, built-in connections for laundry washer and dryer, a water tap for refrigerators which make their own ice cubes, and possibly other items as well.

The computer OS also provides a number of services and built-in applications for basic operations.

The big difference between the two industries is that in the housing construction industry all your built-in appliances, electrical service, etc, are all standardized and publicly known (any built-in appliance can be replaced with another appliance from any manufacturer) -- but in the software development industry, the primary OS, the one with a 95% share of the desktop market, has a stranglehold on the industry because of proprietary built-in products (integrated products) and hidden APIs.

The final remedy should address this inequity so the OS is more like an empty new house. This is not to suggest that the OS must be laid bare, but due consideration should be given to the effect on the software development industry as well as

consumer choice, if certain products are allowed to be included in an OS without some sort of limitations on how the product or capability is added.

The only equitable way to guarantee an even playing field is to simply not allow any integrated products in a monopoly OS. Bundled products and plug-ins should be allowed, but only if they can be completely removed and/or replaced with competing third-party products, without restraint, by either hardware manufacturers/resellers or consumers.

If MS were in the housing construction industry, they would want to sell you a furnished house filled with MS-branded appliances and furniture - and so constructed that you would not be able to replace any built-in product with a non-MS product. What is even worse, MS's new licensing policy would be the equivalent of only renting new houses to its customers!

The next few sections detail specific changes and additions to the Revised Judgement which are necessary if there is any hope at all of providing equity to third-party software developers, a Technical Committee with the ability to actually be effective, and true choice for consumers.

THE NEEDS OF SOFTWARE DEVELOPERS

For software developers, the OS is a commodity which drives all product development. Without all-inclusive and detailed information about the services available in the OS, developers cannot develop viable products for that OS. And if one group of developers is given more complete information than other groups, then the more informed developers will produce the more compatible, the more "integrated" (i.e.: more seamless interface), and the more full- functioned product.

In a monopoly environment, it is even more important than ever to guarantee the equal distribution of detailed documentation about the controlling OS as well as included Middleware products.

First and foremost, there can be no time limits on requirements that MS divulge full documentation on all existing and new APIs, or upcoming changes to existing APIs, to non-MS developers. Otherwise, the day after the Judgement expires, MS could very easily make a few minor changes to their APIs and not publicize them -- and we would be right back where we are today.

In fact, all of these comments pertaining to software developers -- as well as the comments below discussing consumer choice -- should have no time limits!

The Revised Judgement is unfair to non-MS developers in allowing MS to not divulge changes to their APIs until the "last major beta". MS should be required to announce all proposed changes to APIs in the form of a "White Paper" at the time the change is proposed. As each new version of an API is defined or necessary changes to an API are decided upon, MS should be required to announce the new API description. And MS should be required to announce, as accurately as possible, the timeline MS plans for formal release of the modified API. Any "early-release" versions of API libraries made available to MS developers must also be made available to non-MS developers. Any delay in informing non-MS developers of upcoming changes to APIs is an unfair advantage to MS developers.

There can be no limitation on who can see this documentation -- this information must be available to any interested party without restriction, either via published books at reasonable prices and/or via freely available web pages on the Internet.

The wording of the Revised Judgement pertaining to the definition of "documentation" leaves much to be desired. I believe MS can interpret this to mean they can keep the same level of documentation they current have - which is to say the omission of certain API details as to give MS developers the advantage over non-MS developers. The wording in the Alternate Judgement does a better job of describing what is needed. There can be no question that a full and complete detailed description of all APIs necessary for an developer to develop any kind of software to run on any MS OS or Middleware product be available (preferably on the web) for any developer to reference. I emphasize that ANY MS OS or Middleware product be included in this requirement -- this should include handheld devices, new devices (such as the X-Box), and server-side OSs and Middleware. The level of detail and completeness should be sufficient so that any competent developer can use the API without the need to examine the source code to resolve questions the documentation should answer. This level of detail is well recognized within the software development industry.

Not mentioned in the Revised Judgement are file formats. In a monopoly position, it is important to require the monopolist to divulge file formats which controlling OSs, Middleware, or applications use. These full disclosures allow non-MS developers to develop competing products which can read and/or modify these files. These competing products might run on any OS, not just MS's OS. When MS plans changes to these file formats, they should be required to follow the same procedures detailed above for APIs.

When an OS enjoys a monopoly position, it is very important for the health of the software development industry, the benefit of consumers, as well as the continued operation of standards-development and approval bodies, that the controlling OS supports such standards and does so faithfully. MS should be required to faithfully support all recognized standards which the software development industry and other OSs support now and in the future. MS must be required to implement these standards so that any MS or non-MS product which follows the "standard" can inter-operate with the OS and other MS products without any degradation of function. If MS wants to add "enhancements" to a standard, it must do so in such a way that any product which strictly follows the standard does not see any degradation of function. Failure to require MS to faithfully support standards will ultimately result in important "standards" becoming "Microsoft-ized" which will force users of the "standard" to use MSs OS and applications.

Integration of applications into the OS simply should not be allowed! MS should be required to un-integrate its Internet Explorer product, as well as other products it has integrated into its newest Windows XP OS. Only bundled products and plug-ins, as I described above, should be allowed to be added to an OS. If any "default" applications can be specified in the OS, then any application with the same basic functionality, whether MS or non-MS, should be able to be set as the default. The location in the OS where a default application can be set should be intuitively obvious and not hidden away in a hard to find menu somewhere.

With the above exclusion of integrated products in the OS, any bundled or plug-in product, MS or non-MS, should be allowed to be completely deleted from the OS. In the case where a product must be specified as a default for proper operation of the OS, the user should still be allowed to delete any vendor's product, MS or non-MS, and be given a choice

to specify a different default. The only time a deletion would not be allowed is if the product were the only product installed on the OS which could be specified as that default. To "delete" a product should never mean "hide its icon from view" - which is what the Revised Judgement allows. This supports the continued integration of application code into the OS. The code of the hidden product, even though the user no longer sees its icon, can still affect the operation of the OS and potentially disturb the operation of competing non-MS products. Developers need to know that an OS version is stable and unchanging and that installing a new application is not going to change some OS files (i.e. API libraries) and potentially break their applications.

The developing MS .NET initiative should also be mentioned in the final Judgement. A core idea of .NET is the "Common Language Runtime" (CLR). This is a Middleware product just as Java's Runtime System is a Middleware product. It should be clearly stated in the final Judgement that MS cannot develop an OS version where every product is forced to run on the CLR (in other words, MS cannot integrate the CLR into their OS such that other products would not be able to run properly without it). This requirement goes hand-in-hand with requirements stated above to disallow integration of products and to require MS to support existing and future standards as the industry needs. As a monopoly OS, MS must be required to continue to support the widest range of applications and services to guarantee a healthful and innovative climate for software developers.

Specific mention of "intentional incompatibilities" should also be made in the final Judgement. MS was found guilty of adding intentional incompatibilities in an earlier court case involving Windows 3.1 and DR DOS. MS should be warned not to continue this practice in any form. Hopefully the Technical Committee to be set up will be independent and strong enough to be able to guard against this.

THE TECHNICAL COMMITTEE

The proposed Technical Committee must not have undue influence from MS. To this end, no member of the committee should be appointed by MS and MS should not have any veto power or any other kind of oversight power over the committee. There should be no limitation on who can be selected for the committee. MS should provide all necessary money to pay for the committee, but an independent organization should manage the administration of the money.

Technical Committee members should be totally free to divulge to the public any problems or questionable practices it discovers, though source code should not be allowed to be divulged without proper peer review. When questions arise concerning source code, they should first be put through a formal review -- if the code is indeed found to contain "illegal" code, then the source code should be allowed to be divulged and MS forced to fix the problem.

The Technical Committee should have full access to not only the source code but all tools, compilers, and pre-processors which might be used by MS so that the committee can verify independently -- by generating its own executables from the source code and verifying their equivalence to the released executables -- that they have a complete copy of the source code which actually produced the released product. This will protect against the possibility that MS might be hiding bad

code by introducing last-minute patches to their source files as they generate their executables.

If the Technical Committee finds repeated infractions of the Judgement, or gross negligence, it should be stipulated that the Court can reconvene at any time to ponder splitting up MS if the conduct remedies are not effective or are simply being ignored.

EQUITY IN CONSUMER CHOICE

The final Judgement should stipulate the following principles which MS must follow to maximize consumer choice:

1. The setting of default applications, and the installation or deletion of applications, should always be user driven. Never should the code decide on its own to do these things.

2. MS should be required to provide only an "empty house" OS with additional CDs which contain all the MS products MS wishes to bundle and/or plug-in to the OS. These additional products are optional. Each product can be individually installed or deleted from the OS. MS cannot scare the consumer into installing its optional products over non-MS products by any comments in documentation or installation windows. Hardware manufacturers and resellers are free to install either MSs optional products or non-MS products. To keep MS from killing other market categories, and to potentially reinvigorate market categories it has already hampered or decimated, MS should not be allowed to include any products on these additional CDs where other non-MS products already exist in the marketplace unless these other products are also offered for free. When competing products for sale exist, MS must compete for market share with separate products at reasonable prices.

3. MS can publish a separately available OS for purchase by consumers which includes all its allowable bundled and plug-in MS products, but it must still include the additional CDs mentioned above so users have full access to installation and deletion options.

4. MS must compete with all other software developers to provide quality products for bundling and plugging in. MS must publish price lists for these products, including volume discounts, just as described for OS price lists, so MS cannot force its add-ons on its vendors.

5. No MS OS, Middleware, application, or plug-in can periodically pop up a dialog or some other message asking the user if they wish to do this or do that or purchase this service or purchase that service. Windows XP is an example of this horrendous behavior. At the very least, the user must be able to turn this "feature" off at any time.

6. When MS releases new versions of software which support modified file formats, MS should be required to provide separately available, reasonably priced or free, software which will convert not only the older format to the new format, but also convert the new format to the older format. This will negate the benefit MS gains by purposely changing file formats for no other reason than to force customers to purchase the latest version of their software.

THE BOTTOM LINE

Most of the above suggested remedies would come naturally

if the court simply split MS into at least two companies as was originally decreed.

Joseph P. Maia